F. Nicaragua

Nicaragua was the second-most affected country in Central America. At least 3,800 people were killed, and as many as 7,000 more are presumed dead. Most deaths occurred when the crater atop the Casita volcano filled with water and collapsed, sending a torrent of water and mud into populated areas. The hurricane left between 500,000 and 800,000 people homeless. The infrastructure was heavily impacted and damage estimates for property losses are over $1 billion. Some 500,000 houses were damaged and at least 750,000 people were made temporarily homeless. Thirty percent of the coffee crop was destroyed and the beans, sugar and banana crops also suffered greatly.

FEMA contributed to the USAID mission's Intermediate Result #1, "Strengthened local, national, and regional capacity in natural disaster mitigation and preparedness and for effective response to natural disasters in such areas as vulnerability assessments, risk management, emergency operations, and community preparedness."

1. National Emergency Management System

FEMA's goal was to assist Nicaragua in strengthening its emergency management system at the national level by working with the country's national emergency management agency, SNPMAD (Sistema National Para Prevencion, Mitigacion y Atencion de Desastres). FEMA proceeded with the project by bringing a team of experts in the beginning of the project to conduct an initial needs assessment. From the needs assessment, information about the country's emergency management system was collected, and a series of potential activities was identified. Following the needs assessment, representatives from SNPMAD and local NGOs were invited to FEMA to participate in a FEMA sponsored one-week summit on emergency management in June 2000. The Summit provided an overview of principles and practices of emergency management and afforded the opportunity to visit a nearby state emergency operations center and a model disaster resistant community – Project Impact.

The institutional issues that were considered were the national response plan, national emergency management laws and regulations and the national emergency operations center. FEMA wanted to work with SNPMAD to review the existing national response plan, and emergency management laws and regulations, emergency operations center (EOC), and to find ways to improve them in order to give SNPMAD greater leverage when responding to a national emergency.

FEMA supported SNPMAD in the development of the national response plan and sponsored a workshop on the plan for the participating ministries and

organizations. In addition, FEMA's legal consultant helped SNPMAD with the development of regulations and supporting guidebook to implement Law 337, Nicaragua's new emergency management law.

In the area of an EOC, FEMA assessed the existing SNPMAD facility and a potential EOC facility and provided a set of short- and long-term recommendations and design plans to SNPMAD. The recommendations and design plans were subsequently forwarded to and approved by the World Bank for a loan request. FEMA also helped designed and equipped the first national mobile EOC. The mobile EOC was inaugurated in December 2001 and was used by the National Police as a command center for the Presidential Inauguration in January 2002.

While working on the Hurricane Mitch Reconstruction efforts, FEMA coordinated its activities and shared information with the USGS, NOAA, Peace Corps, USDA, HUD, U.S. Southern Command, EU, JICA, PAHO, SICA, USAID/OFDA, World Bank, IDB, UNDP, INETER, CEPREDENAC, CHF, and CEDAPRODE on a routine basis.

2. Building Disaster Resistant Communities

FEMA chose Cooperative Housing Foundation (CHF) as the in-country NGO to implement the Project Impact initiative in Nicaragua because FEMA wanted an organization that has local language and cultural expertise, was already in country with the staffing surge capacity, basic understanding of emergency management, skills in training and capacity building and knowledge of the local environment, community and politics. CHF also subcontracted some of the outreach work to CEDAPRODE, a local NGO with similar qualifications and expertise. CHF and CEDAPRODE had excellent relationship with FEMA and the pilot Project Impact communities. CHF worked closely with FEMA's Project Impact consultant and kept FEMA informed on a quarterly basis through written reports, the FEMA consultant and telephone discussions.

All three Project Impact communities were heavily affected. Despite losses, each community is committed to implementing mitigation projects, and Project Impact has been a catalyst as shown by the following list of projects, by community:

Estelí

Built a vehicle bridge –this project helps with evacuating residents and ensures that communities are not isolated, following flooding events. This project benefits 777 people.
Replaced a drain –this project benefit 2,057 people.
Built five pedestrian bridges –these projects will ensure that communities are not isolated, following flooding events. These

projects will provide security for users, especially children and the elderly, who, in the rainy season try to cross water-filled ravines using unstable foot bridges. These projects benefit 4,506 people.
Built a box bridge –this project benefits 647 people.
Installed a drain installation –This project benefit 1,209 people.
Procured a radio system –this project allows communication with 10 communities that are vulnerable to flooding and who sometimes become isolated during flood events. This project benefits 48,000 people.

Chichigalpa

Strengthened a bridge –this project protects the main vehicular bridge city from flooding. Wing walls have been added to prevent flooding in a nearby neighborhood. Steps have been added to the dry creek bed to slow down runoff velocity. This project benefits 1,080 people.
Built two pedestrian bridges –these projects ensure that communities are not isolated, following flooding events. These projects will provide security for all users, especially children and elderly residents, who, in the rainy season try to cross water-filled ravines using unstable foot bridges. These projects benefit 1,720 people.
Procured a radio system –this project allows communication with 8 communities that are vulnerable to flooding and who sometimes become isolated during flood events. This project benefits 20,649 people.
Implemented a training and publicity project –this project benefits 280 people.

Bluefields

Trained 370 social promoters –this project includes training citizens in disaster prevention and mitigation. Once trained, these citizens will train others. This project benefits all of Bluefields.
Implemented a publicity and awareness campaign –this project educates citizens on what to do before, during and after disasters. The entire city will benefit.
Cleaned ditches in five neighborhoods –this project also provides a maintenance schedule, to be accomplished by area residents. This project benefits 3,000 people.
Constructed 18 pedestrian bridges and reinforced 32 pedestrian bridges –these projects ensure that residents are not isolated, following flooding event. These projects provide security for all users, especially children and elderly residents, who try to cross streams and rivers using unstable foot bridges. These projects benefit 9,000 people.

Constructed a drain system –this project will prevent future flood losses. The project benefits 4,000 people.
Proposed the relocation of 100 houses –The proposal outlines how the city will relocate 100 flood-vulnerable houses. This project will benefit 500 people.